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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/760,562

01/20/2004

Shih-Hsien Chen

AUO-101

1069

7590

01/13/2005

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EXAMINER

HAN, JASON

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/760,562

Applicant(s)

CHEN ET AL.

Examiner

Jason M Han

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/10/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "14" has been used to designate both reflective sheet and resilient pads. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "bottom surface 220a" is not shown in Figure 2C [Page 5, Line 22], nor in Figures 2A-2B and 2D [Page 6, Line 10]. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing

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figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "edge reflection part 222" and "light 226" are not shown in Figures 2A-2B and 2D [Page 6, Lines 12-13]. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:
- a. Page 2, Line 4: typographical error – please rewrite to read "light-shielding layer 69";
- Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 9, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Osawa et al. (U.S. Patent 5769521).

6. With regards to Claim 1, Osawa discloses a backlight assembly including:

- a frame [Figures 1-13: (16)] having a frame body in which are embedded a plurality of contact pads [Figure 2: (18, 19, 20)];
- a light guide plate [Figures 1-13: (11)] mounted to the frame; and
- multiple light emitting devices/sources [Figures 1-2: (17)] connected to the contact pads and respectively having a light radiating surface facing a first surface of the light guide plate [Figures 12-13: (31)], whereby the light irradiated from the one or more light sources emerge out through a second surface of the light guide plate [Figures 12-13: (11)] towards a liquid crystal panel [Column 1, Lines 5-10].

7. With regards to Claim 2, Osawa discloses a reflective sheet [Figures 3-5: (16); Column 3, Lines 26-40] placed at a side of the light guide plate to direct light towards the light guide plate [Figure 1: (11)] and eventually towards the liquid crystal panel [Column 1, Lines 5-10].

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8. With regards to Claim 9, Osawa discloses the first surface [Figure 12-13: (31)] of the light guide plate being a side edge surface of the light guide plate.

9. With regards to Claim 14, Osawa discloses the light emitting devices including a light emitting diode [Column 3, Lines 6-7].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 3-5, 8, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osawa et al. (U.S. Patent 5769521) as applied to Claim 1 above.

11. With regards to Claim 3, Osawa discloses the claimed invention except for the light emitting devices being placed at a side of the light guide plate that is opposite to the side of the liquid crystal panel. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have placed the light emitting devices at a side of the light guide opposite to the side of the liquid crystal panel to ensure desired illumination/optical effects, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japske*, 86 USPQ 70. In this case, mere disposition of the light sources at a side or bottom surface of a light guide is commonly known within the art and a matter of design preference.

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12. With regards to Claim 4, Osawa discloses the claimed invention as cited above.

In addition, Osawa teaches the light emitting devices [Figure 1: (17)] positioned proximate to a side edge of the light guide plate [Figure 1: (11)].

13. With regards to Claim 5, Osawa discloses the claimed invention as cited above.

In addition, Osawa teaches the reflection member [Figures 3-5, 12-13: (16)] being provided in an area of the side edge of the light guide plate [Figures 3-5, 12-13: (11)].

14. With regards to Claim 8, Osawa discloses the claimed invention as cited above.

In addition, Osawa teaches the light guide plate including multiple recessed cavities [Figure 1: (33)] on the first surface for accommodating the light irradiating surface of the multiple light emitting devices.

15. With regards to Claim 13, Osawa discloses the claimed invention as cited above

except for contact pads being made of a conductive metal or metallic alloy. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the contact pads comprising of a conductive metal or metallic alloy, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. In this case, it is commonly known and obvious to have made the electrical contact pads out of a metallic alloy due to inherent conductive properties associated with many metals.

16. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osawa et al. (U.S. Patent 5769521) as applied to Claim 5 above, and further in view of Elderfield (U.S. Patent 5166815).

Osawa discloses the claimed invention as cited above, but does not specifically teach the reflective member comprising of a reflective coating.

Elderfield teaches, "A portion of the top surface 12 located over the aperture 4 has a reflective coating 13a to prevent light emitted by light sources 16 (FIG. 4) in aperture 4 from propagating through that portion of the top surface. The ramped surface 8 is also coated with a reflective coating 13b; this coating reflects emitted light through the top surface 12 not covered by coating 13a [Column 1, Lines 28-34; underlines added by examiner for emphasis]."

It would have been obvious to modify the reflective member of Osawa to incorporate the reflective coating of Elderfield, which is considered an engineering decision since a reflective coating does not serve to solve any additional problems and is functionally equivalent to a reflective material (i.e. metal).

17. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osawa et al. (U.S. Patent 5769521) as applied to Claim 5 above, and further in view of Ishihara et al. (U.S. Publication 2001/0003504).

Osawa discloses the claimed invention as cited above, but does not specifically teach the reflection member is a surface of the light guide plate inclined at an angle.

Ishihara teaches such a reflection member is a surface [Figure 1: (25)] of a light guide plate [Figure 1: (20)] inclined at an angle.

It would have been obvious to modify the backlight of Osawa to incorporate the inclined reflective surface of Ishihara to provide a more compact device wherein the

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reflection member and edge of the light guide plate are made integral, as well as to provide a desired optical effect and greater light efficiency via less light loss.

18. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osawa et al. (U.S. Patent 5769521) as applied to Claim 1 above, and further in view of Ayres (U.S. Patent 6068381).

19. With regards to Claim 10, Osawa discloses the claimed invention as cited above, but does not specifically teach the frame body being formed by injection molding.

Ayres teaches, "The above back light device can be made by molding the frame around the light waveguide, for instance by injection molding using a vertical injection molding machine and a rotary table supporting dies in which the light waveguides are placed. The lamp and terminal assembly can then be automatically or manually mounted in the frame and the diffuser can be assembled onto the frame [Column 2, Lines 52-58; underlines added by examiner for emphasis]."

It would have been obvious to modify the backlight of Osawa to incorporate the injection molding process of Ayres in making the frame so as to provide a simple manufacturing of the device. Such a configuration is commonly known within the art, whereby it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

20. With regards to Claim 11, Osawa in view of Ayres discloses the claimed invention as cited above. In addition, Ayres teaches contact pads [Figures 1 & 4: (58,

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60)) that include resilient bent portions [Figure 4: (66)] to which a light device [Figure 4: (52)] is connected.

21. With regards to Claim 12, Osawa in view of Ayres discloses the claimed invention as cited above. In addition, Ayres teaches, "The lamp and terminal assembly 16, as shown in FIG. 4, is made up of a conventional illuminating lamp member 52 having a tubular light emitting body 54 mounted to enlarged metallic end members 56. Preshaped terminals 58, 60 include tabs 62 that are soldered directly to the end members 56 [Column 4, Lines 60-65; underline added by examiner for emphasis]."

22. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ayres (U.S. Patent 6068381) in view of Hawkins (U.S. Patent 5550715).

23. With regards to Claim 15, Ayres discloses a frame structure for a backlight assembly including:

- a frame body [Figure 1: (20, 22, 24, 26)];
- a plurality of contact pads [Figure 1: (58, 60)] embedded into the frame body [Figure 1: (24)];
- whereby the contact pads are configured to receive the mount of one or more light-emitting devices [Figure 1: (52)].

Ayres does not specifically teach the contact pads externally connect to a power source.

Hawkins teaches an external light source for backlighting display wherein a self-contained power source is coupled to a light emitting element [Claim 2].

It would have been obvious to modify the backlight of Osawa to incorporate the power source of Hawkins in order to ensure adequate energy required for the light emitting devices, as well as to make the system more portable via battery [see Claim 4 of Hawkins]. Such a configuration is commonly known within the art, whereby it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

24. With regards to Claim 16, Ayres in view of Hawkins discloses the claimed invention as cited above. In addition, Ayres teaches the contact pads [Figures 1 & 4: (58, 60)] including resilient bent portions [Figure 4: (66)] to which the one or more light emitting device [Figure 4: (52)] is connected.

25. With regards to Claim 17, Ayres in view of Hawkins discloses the claimed invention as cited above except for the contact pads being made of a conductive metal or metallic alloy. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the contact pads comprising of a conductive metal or metallic alloy, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. In this case, it is commonly known and obvious to have made the electrical contact pads out of a metallic alloy due to inherent conductive properties associated with many metals.

26. With regards to Claim 18, Ayres in view of Hawkins discloses the claimed invention as cited above. In addition, Hawkins teaches, "The light emitting element 109

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may be an incandescent, fluorescent, halogen, or LED, electroluminescent, or other light emitting element [Column 2, Lines 54-56; underline added by examiner for emphasis].”

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references are cited to further show the state of the art pertinent to the current application, but are not considered exhaustive:

US Patent 3868676 to Hennessey et al;	US Patent 3914021 to Nishimura;
US Patent 4025147 to Van Arsdale et al;	US Patent 4545023 to Mizzi;
US Patent 4714983 to Lang;	US Patent 4789224 to Bougsty;
US Patent 4975808 to Bond et al;	US Patent 5070431 to Kitazawa et al;
US Patent 5134548 to Turner;	US Patent 5272601 to McKillip;
US Patent 5381309 to Borchardt;	US Patent 5420710 to Nanbu;
US Patent 5436745 to Voison et al;	US Patent 5450221 to Owen et al;
US Patent 5537296 to Kimura et al;	US Patent 5539554 to Lebby et al;
US Patent 5567042 to Farchmin et al;	US Patent 5654779 to Nakayama et al;
US Patent 5661339 to Clayton;	US Patent 5889568 to Seraphim et al;
US Patent 5889623 to Ueda et al;	US Patent 5947578 to Ayres;
US Patent 6036328 to Ohtsuki et al;	US Patent 6147724 to Yoshii et al;
US Patent 6220741 to Kawachi et al;	US Patent 6268694 to Fujimoto;
US Publication 2002/0003595 to Yazawa;	US Publication 2002/0101729 to Hayashi et al;
US Patent 6490016 to Koura;	US Publication 2002/0181231 to Luk;
US Patent 6498631 to Natsuyama;	US Patent 6508564 to Kuwabara et al;

US Patent 6545732 to Nakano;

US Publication 2003/0223249 to Lee et al;

US Patent 6666567 to Feldman et al;

US Patent 6719436 to Lin et al;

US Publication 2004/0090766 to Chen;

US Patent 6806920 to Hayashi et al;

US Patent 6814458 to Kim et al;

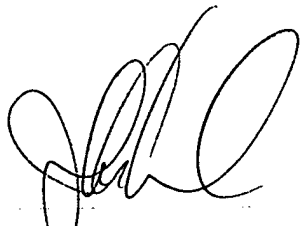
US Publication 2004/0232853 to Hur et al;

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M Han whose telephone number is (571) 272-2207. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMH (1/6/2005)



JOHN ANTHONY WARD
PRIMARY EXAMINER